

## Claims

That which is claimed is:

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all

1        1. A system for assigning a call to one of a plurality of wireless frequency channels in a  
2 wireless communication network, comprising:  
3        a wireless transceiver that assigns the call to one of the plurality of wireless frequency  
4 channels; and  
5        a modulation control device that identifies one of the plurality of wireless frequency  
6 channels for the call and provides an assignment modulation parameter to the transceiver for  
7 assigning the call to the frequency channel, wherein the assignment modulation parameter includes  
8 a phase.

1        2. The system in claim 1, wherein the wireless communication network comprises an  
2 advanced mobile phone system (AMPS) network.

1        3. The system in claim 1, wherein the modulation control device provides assignment  
2 modulation parameters including timeslot and frequency to the transceiver.

1        4. The system in claim 3, wherein the wireless communication network comprises a time  
2 division multiple access wireless network.

1        5. The system in claim 3, wherein the wireless communications network comprises a time  
2 division multiple access personal communications system (PCS) network.

1        6. The system in claim 3, wherein the wireless communications network comprises a time  
2 division multiple access global system for mobile communications (GSM) network.

1        7. A modulation control device for use in a wireless communication network to assign a  
2 call to a next frequency channel selected from a plurality of frequency channels, comprising:

3 a threshold detector that measures a transmission quality of each frequency channel; and  
4 a modulation control mechanism that selects the next available frequency channel based on  
5 the frequency channel quality measurement of the threshold detector, and that selects a phase  
6 adjustment value, whereby the call is assigned to the next available frequency channel at the  
7 selected phase adjustment value.

1 8. The modulation control device of claim 7, wherein the modulation control mechanism  
2 calculates the phase adjustment value to assign to the frequency channel.

1 9. The modulation control device of claim 7, wherein the modulation control mechanism  
2 stores a plurality of phase adjustment values.

1 10. The modulation control device of claim 7, wherein the modulation control mechanism  
2 selects the phase adjustment value that maximizes the phase separation between the calls on a  
3 single frequency channel

1 11. The modulation control device of claim 7, wherein the modulation control mechanism  
2 selects the phase adjustment value that provides a unique resultant phase value for the call on the  
3 frequency channel.

1 12. A mobile unit for use in a wireless communication network with a plurality of  
2 frequency channels, comprising:  
3 a transceiver; and  
4 a mobile modulation control device that receives a phase adjust value over the wireless  
5 communication network, and provides the phase adjustment value to the transceiver for call  
6 retrieval during demodulation and for modulation during transmission.

1 13. A method for use in a wireless communication network with a plurality of frequency  
2 channels for assigning a call to one of the frequency channels, comprising:

3 assigning a frequency channel and a phase adjustment value to the call;  
4 communicating the phase adjustment value to a mobile unit that is associated with the call;  
5 and  
6 associating the phase adjustment value with the call so that the phase adjustment value can  
7 be used for transmitting the call and referenced for receiving the call.

1 ~~14.~~ A method for use in a wireless communication network with a plurality of frequency  
2 channels for assigning a call to one of the frequency channels, comprising:  
3 measuring a transmission quality of the frequency channels individually;  
4 evaluating the transmission quality of each frequency channel until a first frequency  
5 channel having a suitable transmission quality is identified; and  
6 assigning the call to the first frequency channel and assigning a first phase adjustment  
7 value to the call.

1 15. The method of claim 14 further comprising the step of associating the phase  
2 adjustment value with the call so that the phase adjustment value can be used for transmitting the  
3 call and referenced for receiving the call.

1 16. The method of claim 14 wherein the evaluating step comprises comparing the  
2 transmission quality of the frequency channel to a value until the transmission quality exceeds the  
3 value.

1 ~~17.~~ A method for use in a wireless communication network with a plurality of frequency  
2 channels divided into a plurality of timeslots for assigning a call to at least one of the timeslots in  
3 one of the frequency channels, comprising:  
4 measuring a transmission quality of the frequency channels individually during each  
5 timeslot;  
6 evaluating the transmission quality of each frequency channel during each timeslot until a  
7 first frequency channel having a suitable transmission quality is identified; and

8 assigning the call to the first frequency channel and assigning a first phase adjustment  
9 value to the call.

1 18. The method of claim 17 further comprising the step of associating the phase  
2 adjustment value with the call so that the phase adjustment value can be used for transmitting the  
3 call and referenced for receiving the call.

1 19. The method of claim 17 wherein the evaluating step comprises comparing the  
2 transmission quality of the frequency channel during each timeslot to a value until the transmission  
3 quality exceeds the value.

1 20. A method for use by a mobile unit to receive calls which are transmitted with a phase  
2 adjustment value, comprising:  
3 receiving a phase adjustment value that identifies, at least in part, a first call received on a  
4 frequency channel; and  
5 demodulating the first call on the frequency channel utilizing the phase adjustment value.

1 21. The method of claim 20 further comprising the step of filtering out noise.

1 22. A method for use by a mobile unit to transmit calls which have been assigned a phase  
2 adjustment value, comprising:  
3 receiving a phase adjustment value that identifies, at least in part, a first call; and  
4 modulating the call utilizing the phase adjustment value.

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